

Lesson 4

Peripheral Scan/Control Room Equipment

Lesson 4

Administrative Issues and Procedures

Safety Issues

Scan Operations and Procedures

Data and Image Transfer

Scan Room Peripheral Equipment

Avotec

Medrad

etc

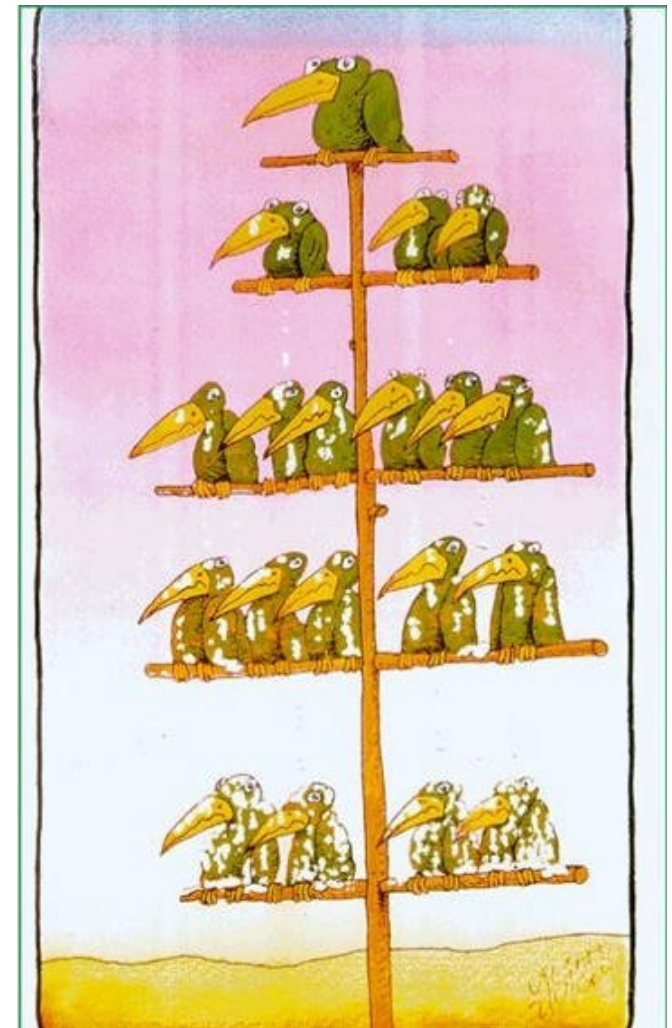
Scan Room Issues

Supplies

Waste

Miscellaneous

Advanced Training



The Avotec System



- Audio
- Visual
- Eye Tracking

The Avotec _Base Component



- Main On/Off rocker switch

Avotec _Video Component



- Resides on the cart in the scan room, next to the shroud

Avotec System_Real Eye Component



- Resides on the cart in the scan room, next to the shroud

Avotec_Real Eye Component



- Clean before use
- Stimulus presentation
- Eye tracking
- Video Watching

The Bite Bar System

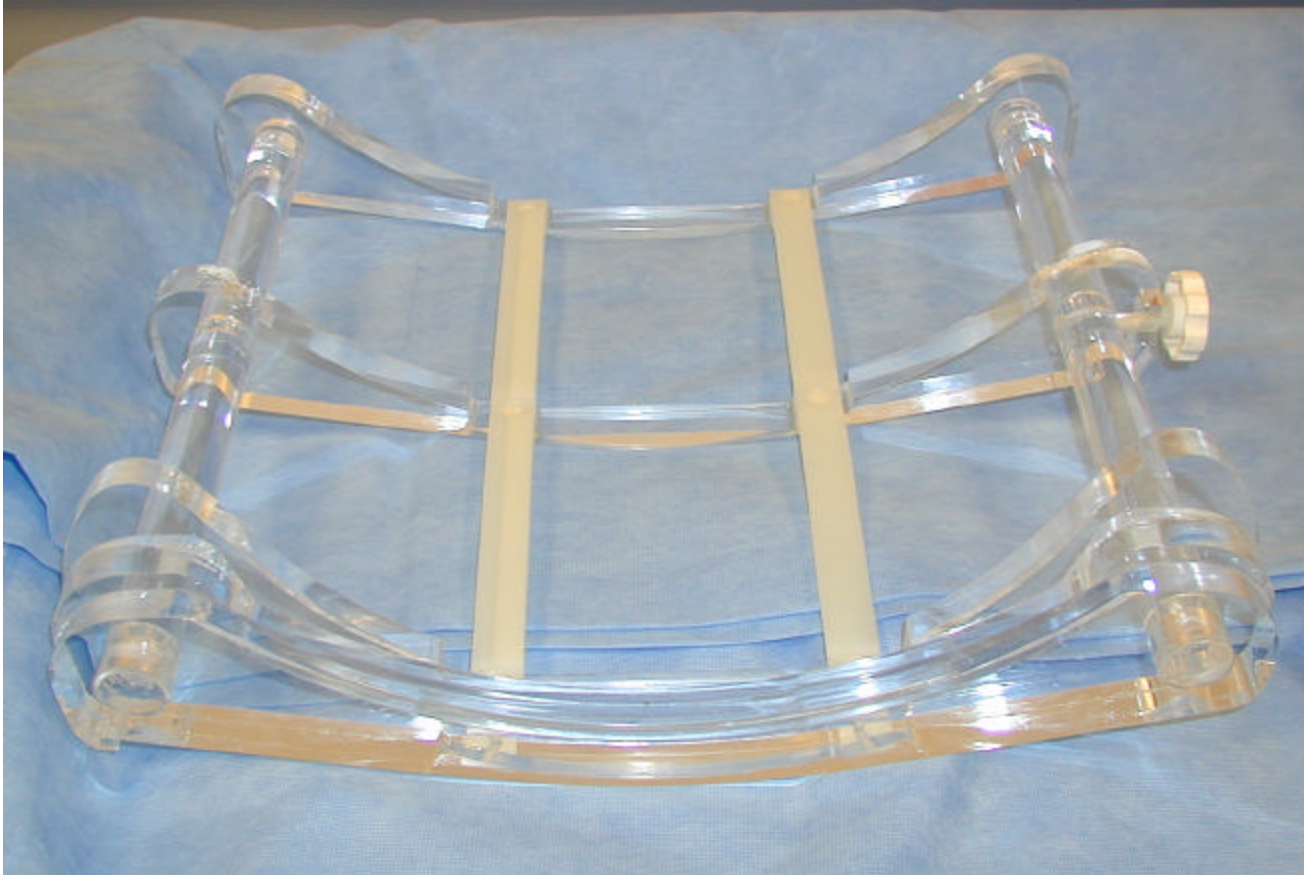
- Head, motion restraint system
- Use with GE Coil, MAI Coil or Nova Coils
- Use dental material with bite wings

Dental Materials



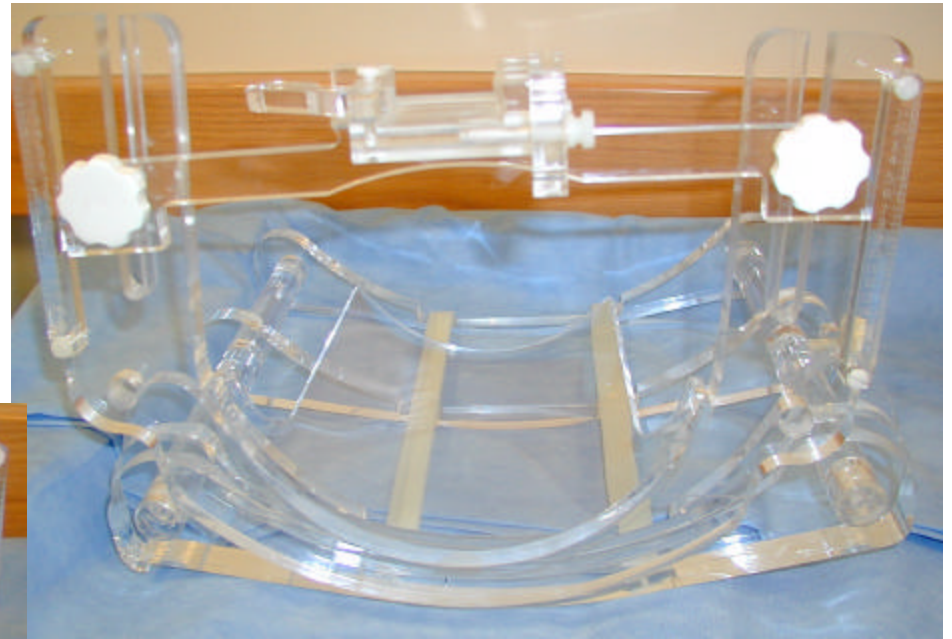
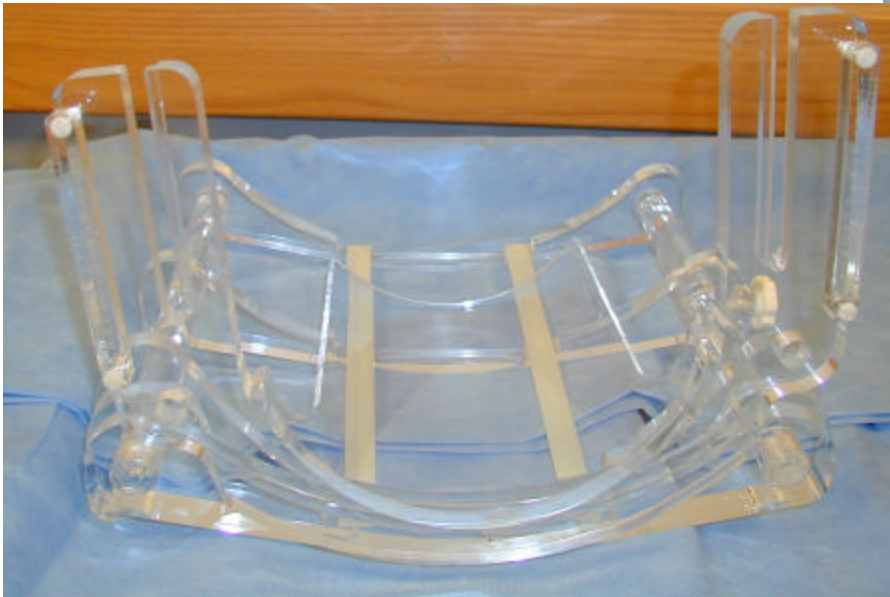
- Make mold with dental material and bite wing
 - Hot Water
 - Hydroplastic or Reprosil

Bite Bar System_Table Tray



- Fits on the table top to hold coil

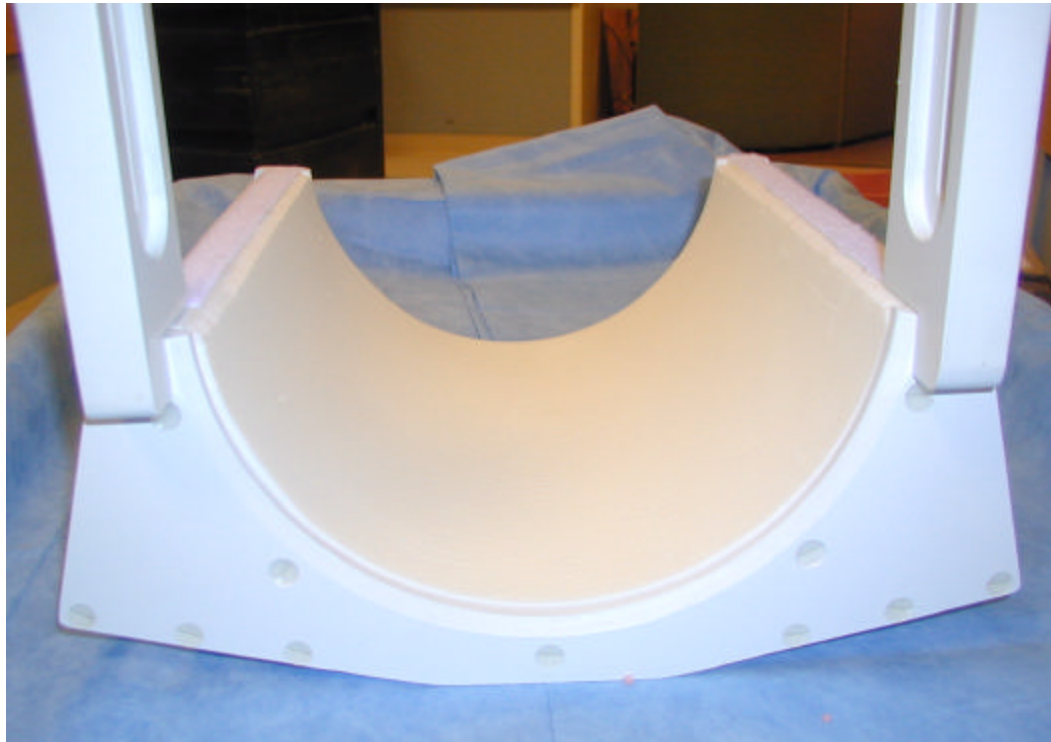
Bite Bar System with X-Bar



Bite Bar System with the GE Coil



Bite Bar System_Nova Coil



Power Injector Over View

- Medrad Spectris Power Injector

(same injector used in all the NMR F scan rooms)

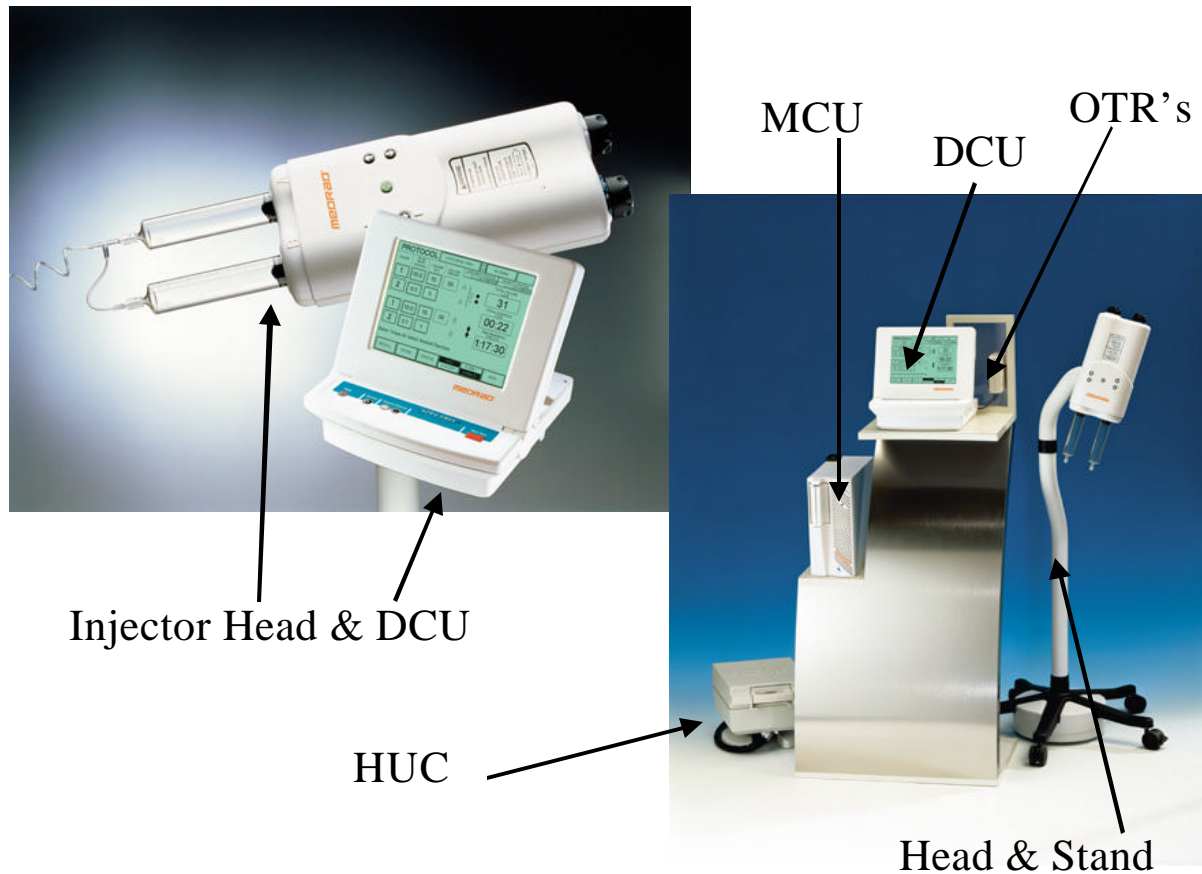
- Injector Kits
- Battery



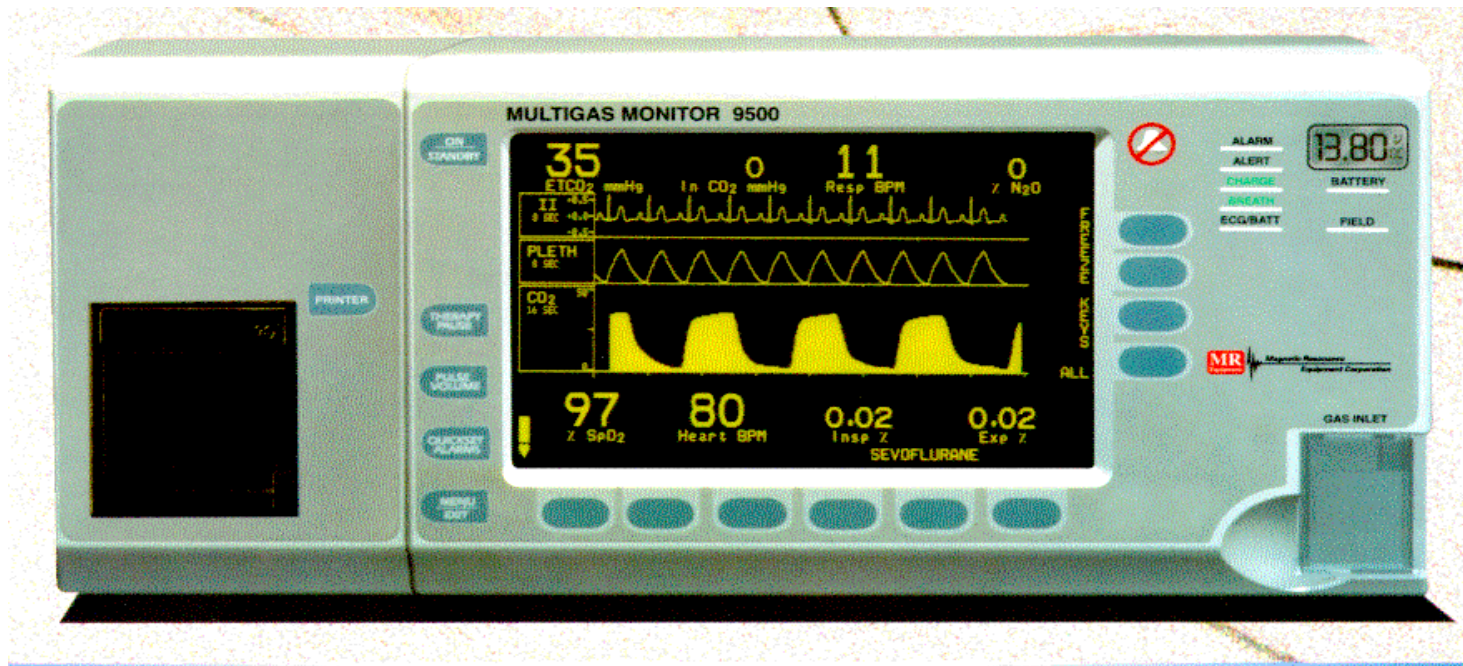
Medrad Spectris Power Injector



Power Injector Components



The Medrad 9500 ECG Monitor



- Fiber Optic
 - Pulse Oximetry
 - NIBP
 - End-Tidal CO₂
 - Anesthesia Capabilities

The Medrad ECG Monitoring System



The Main Monitor

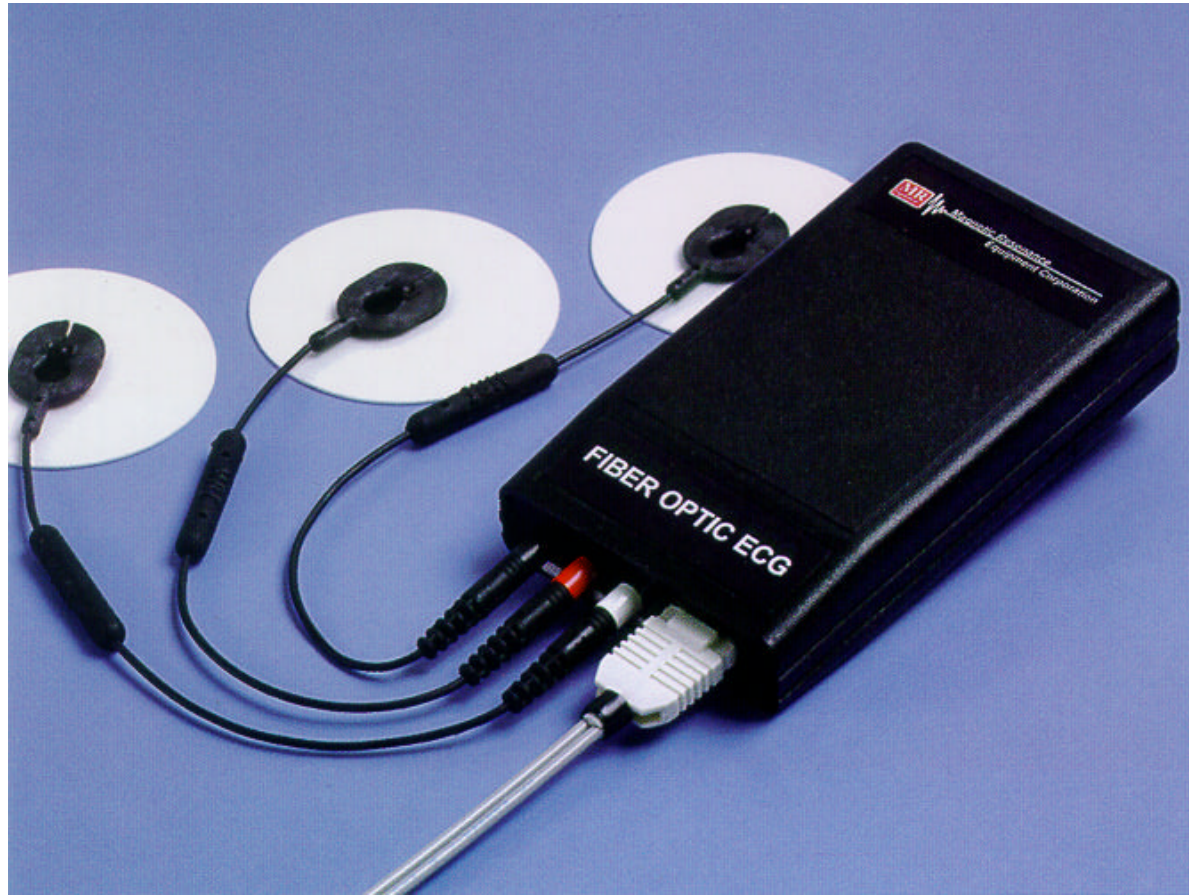
The Fox Module



The ECG Box_Shroud

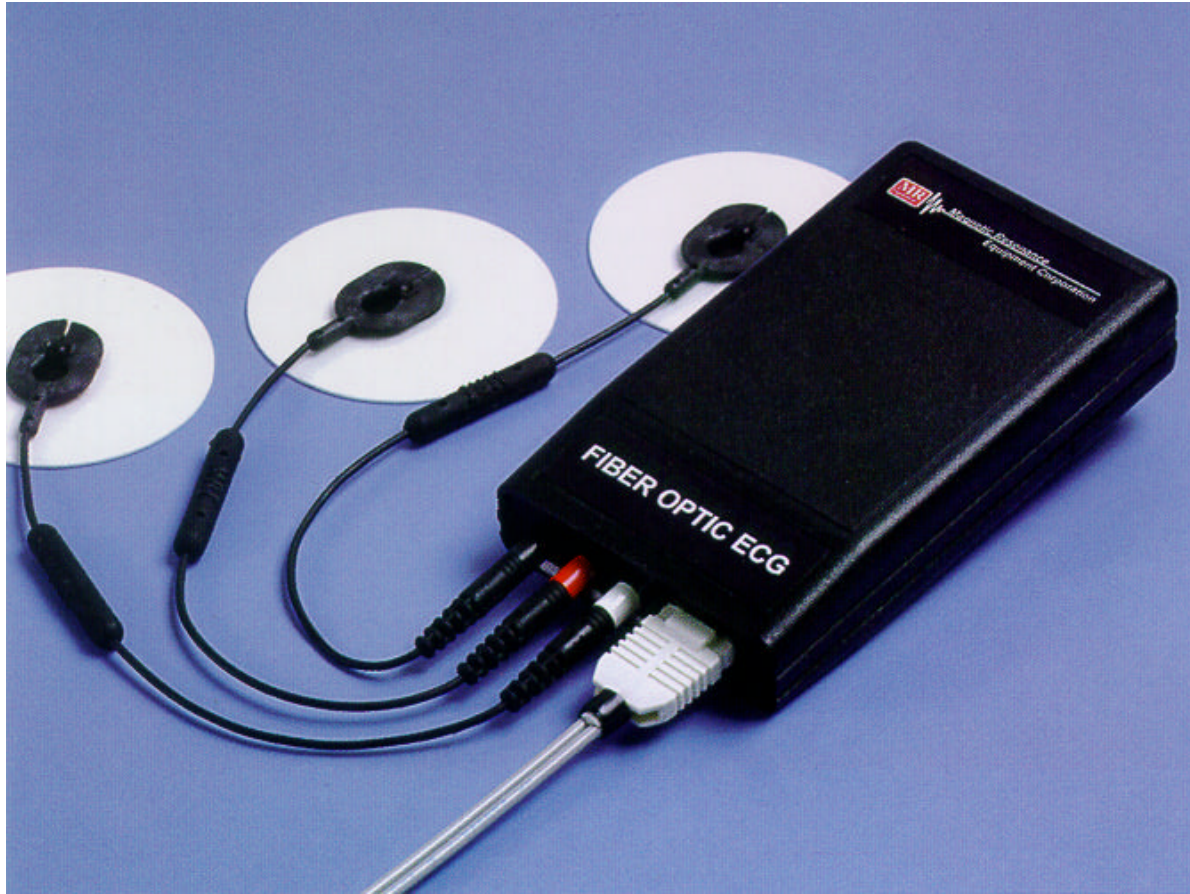
The Remote Monitor

The Medrad Fox Module



- Attach to the patient electrodes
 - On/Off switch on the side

The Medrad Fox Module



- Regular
- T-Wave
Suppressor
- Super Fox

ECG Gating Control Window

GATING CONTROL

Waveform Display

☐ Cardiac

ECG Noise Filter: ☐ OFF

Advanced ECG Gating: ☒ ON

☐ Respiratory

☐ ECG Histogram

Cardiac Sweep Rate

☐ 10mm/sec

☐ 21mm/sec

☒ 41mm/sec

Gating Reset

Lead Display

☒ ECG-I

☒ ECG-II

☒ ECG-III

☒ PG

☒ Auto

Cardiac Trigger Level

☐ 50%

☐ 60%

☐ 70%

☒ Auto

Trigger Level: %

Update

R-peak Amp. mV

Cardiac Trigger Level Annotation: ☐ OFF

Audio Trigger Volume: 5

Accept

- This is the Default setting
 - Click on appropriate settings for gating or pulse oximetry

Safety Concerns with ECG and Monitoring Equipment

- Coiled wires, can = patient burns
- ECG patches do NOT heat up significantly

FDA: Maude search for safety issues with monitoring equipment (USA)

www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfMAUDE/search

Potential Use of the ECG During MRI

- ECG gating for acquisitions
- Patient safety monitoring (arrhythmias)

ECG Specific Information

- Needs true “hands on” sessions in addition to presentation

Please make appointment for more detailed information

Scan Room Issues



- These are not acceptable ways to leave the scan room
- Additional laundry available in all scan rooms and/or the Linen Cart
(in the back hallway by Signa 2)

Acknowledgements

3 Tesla Core Facility

NHLBI

NMR F

Duke List Serve for MR Technologists

GE Medical Systems

Avotec, Inc.

Medrad, Inc.

Berlex Laboratories

ACR Glossary of MR Terminology